

See you in court

Diana Phillips Mahoney

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Abstract:

Engineering Animation Inc (EAI) has developed a method of simulating criminal activity to help juries in civil litigation trials visualize complex engineering principles germane to the case. EAI's animations have appeared in medical malpractice, product liability and auto accident trials. EAI's client Rockwell Graphics Systems recently won \$2.7 million in damages in a case involving employees accused of stealing plans for expensive printing presses and taking them to another company. EAI used SDRC's I-deas three-dimensional animation software to model the movement of ink-transfer rollers inside the press, which Rockwell claimed was proprietary technology developed over a long period. Some critics say animation can be inaccurate and can be used to present conditions in a biased way. EAI undertakes extensive research and incorporates engineering principles into the simulation before animating it.

Full Text:

Judging from the success Engineering Animation Inc. (EAI) has seen in court, computer graphics is making the "perfect crime" ever more elusive. Founded by engineers who have experience as expert witnesses in court cases, EAI--a computer animation company based in Ames, Iowa--has helped clients win verdicts in such diverse civil litigation areas as product liability, motor vehicle accidents, and medical malpractice.

Acknowledge that computer animations for court cases are big business these days, EAI president Matthew Rizai believes that his company's simulations stand alone, inasmuch as they often visualize complex engineering principles that might be overlooked by people without the technical background to understand them.

A recent example is the company's animation of a printing press manufactured by Rockwell Graphics Systems. The latter alleged that former employees stole crucial blueprints for one of its multimillion-dollar presses and subsequently used them to design a rival product. Rockwell's attorneys hoped an animation would help impress upon the jury the high degree of specificity involved in the operation of the press in question. "We're talking tolerances down to micro inches," says Rizai. "It took Rockwell several years to come up with its design, yet somehow the other company came up with a design and the next thing you know they had a fully operational press."

To support Rockwell's case, EAI first created complex 3D assembly models of the press and its component parts using I-deas software from SDRC (Milford, OH). With proprietary software, the group simulated the mechanical motion of the press and created animations to demonstrate the ink-transfer process, with the sides of the press fading away to show the movement of the rollers inside.

Rizai notes that even though Rockwell had expert witnesses on the stand to explain the subtleties of the printing process, the animations helped the jury to visualize what the witnesses were saying. "It can be pretty confusing. I mean, I have a Ph.D. in mechanical engineering, yet the first time I met with the expert witnesses, I had no idea what they had just spend three hours telling me." The animations, he says, "empowered" the jury to reach an informed decision. Ultimately, Rockwell won a \$2.7 million verdict.

Much controversy has arisen regarding the use of computer graphics, particularly animations, as a litigation aid. Opponents argue that most people believe that anything generated on a computer must be accurate, while in fact visualizations can be skewed to distort reality. Although Rizai understands this concern--"With animation, you can do almost anything; you can make a car fly if you want to," he says--he believes that the system has built-in safeguards against this, particularly as animations become more prevalent. "Because these things can be so powerful and convincing, the other side doesn't want you to enter them as demonstrative evidence, so they'll take you through every angle to make sure the jury never sees it." For that reason, he says, the animations have to be accurate or they won't make it into the courtroom.

Because of this, EAI conducts exhaustive research--visiting sites, taking photos, interviewing experts, and

relying on established physical properties--before creating an animation. "Once we understand the issue and what the client is trying to do, we put together sort of a draft and we sit down with the client to review it," says Rizai. "Sometimes the client drives the whole thing, telling us to look at something from a certain angle or to change the color or lighting." When the client is satisfied, the animation is recorded to laserdisc, which can then be taken to settlement hearings or courtroom litigation.

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